

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: BR000-0001-00(370), Lincoln County **OFFICE:** Engineering Services
P.I. No.: 0001370
SR 43/US 378 Bridge Replacement **DATE:** March 25, 2009
over the Savannah River

FROM: Ronald E. Wishon, Acting Project Review Engineer *REW*

TO: Tony Collins, District Engineer, Tennille
Attn: Foster Grimes, Project Manager

SUBJECT: **IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES**

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT No.	Description	Savings PW & LCC	Implement	Comments
BRIDGE DECK				
BD-1	Use 11-foot wide lanes on the bridge in lieu of 12-foot wide lanes and reduce the width of the bridge.	\$92,965	No	The roadway approaching lane widths are 12-feet. Re-design efforts would cause a delay in the schedule and become ineligible for stimulus funds.
BD-2	Use 8-foot wide shoulders in lieu of 10-foot wide shoulders, narrow the bridge deck and eliminate one bridge girder.	\$389,885	No	Additional costs such as guardrail lengths, object markers and redesign were not considered in the cost savings.

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Implementation of Value Engineering Study Alternatives

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BRIDGE FOUNDATIONS				
BF-1	Use drilled piers in lieu of spread footings on a concrete seal.	\$3,043,998	No	Using seals and cofferdams enables the designer to optimize the size of the columns for this project. Using caissons for this project will make the columns considerably longer which will result in very large caissons for this bridge. The large caissons will negate the savings on this item.
BF-2	Eliminate one span of the bridge and use longer beams spaced 152-feet apart in lieu of 140-feet apart.	\$156,221	No	The spans are optimized based on the beam spacing and the beam types. Eliminating a span adds a line of beams which tends to negate the savings for this item.
BF-7	Use concrete post-tensioned beams with drop-in sections spanning 240-feet and reduce the number of piers from 11 to 6.	\$479,780	No	This is a complicated alternate for construction and may not realize the savings indicated and will add construction time to the project. This is a stimulus project and time is not available for this redesign.
EMBANKMENT				
E-1	Reduce the limits of the rock embankment.	Proposed= \$259,511 Actual= \$211,471	Yes	This should be done.

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Implementation of Value Engineering Study Alternatives

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CONTRACTING				
C-1	Procure the project using a Design-Build contract in lieu of a Design-Bid-Build.	Design Suggestion	No	This requires a complicated process of selecting appropriate candidates and requires a long lead time for advertising, forming teams, and short listing teams. This is a stimulus project and time is not available for this process.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved:



Date: 3/23/09

Gerald M. Ross, P. E., Chief Engineer

REW / DMF

Attachments

c: Genetha Rice Singleton
George Brewer
Alan Smith
Larry Morris
Tony Collins
Foster Grimes
Paul Liles
Bill DuVall
Bill Ingalsbe
Doug Franks
Jim Kitchings
Rusty Merritt
Lynn Bean
Nabil Raad
Lisa Myers
Douglas Fadool
General Files

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

DATE March 24, 2009

FROM *FLG*
Foster Grimes, District Design Squad Leader
TO Ron Wishon, Assistant Project Review Engineer
Attn: Doug Fadool

SUBJECT BR000-0001-00(370) - Lincoln County
P.I. No.: 0001370
Value Engineering Study: Response to Recommendations

These are the responses to the Value Engineering Alternatives recommended by the Value Engineering Team:

Recommendation BD-1: Use 11-ft wide lanes on the bridge in lieu of 12-ft wide lanes and reduce the width of the bridge.

Response: Dot not Implement

The roadway width uses 12'-0" lanes approaching the bridge. To make the bridge width narrower than the roadway approaches would create a narrow bridge condition which diminishes the safety of the approaches while not saving a significant amount of money when compared to the overall project costs. Some additional cost would be incurred by this alternative that was not considered in the VE study. These include additional guardrail lengths and object markers. Due to the limited time frame associated with this project for inclusion into the Federal Stimulus package, the cost incurred to redesign the bridge and to make necessary plan changes would cause this project to become ineligible for these funds. The bridge width has been designed in accordance with the approved policies of GDOT at the time of its conception (MOG 4265-10) and given the time constraints involved with this project, this recommendation is considered unfeasible.

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P.I. No: 0001370

Value Engineering Study Response

Recommendation BD-2: Use 8-ft wide shoulders in lieu of 10-ft wide shoulders, narrow the bridge deck and eliminate one bridge girder.

Response: Do not implement

To make the bridge width narrower than the roadway approaches would create a narrow bridge condition which diminishes the safety of the approaches while not saving a significant amount of money when compared to the overall project costs. Some additional cost would be incurred by this alternative that was not considered in the VE study. These include additional guardrail lengths and object markers. Due to the limited time frame associated with this project for inclusion into the Federal Stimulus package, the cost incurred to redesign the bridge and to make necessary plan changes would cause this project to become ineligible for these funds. The bridge width has been designed in accordance with the approved policies of GDOT at the time of its conception (MOG 4265-10) and given the time constraints involved with this project, this recommendation is considered unfeasible.

Recommendation BF-1: Use drilled piers in lieu of spread footings on a concrete seal.

Response: Do not implement.

Using seals and cofferdams enabled us to optimize the size of the columns for this project. Using caissons will make the columns considerably longer which will result in very large caissons for this bridge. The large caissons will negate the savings on this item.

Recommendation BF-2: Eliminate one span of the bridge and use longer beams spaced at 152 ft apart in lieu of 140 ft apart.

Response: Do not implement

The spans are optimized based on the beam spacing and the beam types. Eliminating a span adds a line of beams which tends to negate the savings for this item.

Recommendation BF-7: Use concrete post-tensioned beams with drop-in sections spanning 240 ft and reduce the number of piers from 11 to 6.

Response: Do not implement

This is a complicated alternate for construction and may not realize the savings indicated and will add construction time to the project. This is a stimulus project and time is not available for this redesign.

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Value Engineering Study Response

Recommendation E-1: Reduce the limits of the rock embankment.

Response: Partial - Implement

A revised Soil Survey was requested from the Office of Materials and Research and approved to use 1.5:1 rock slopes along the proposed roadway embankment in lieu of 2:1 slopes. This reduction in slope saved 6006 cubic yards of rock embankment. The rock embankment along the abutments is in place at the designated length in order to prevent swirling between the old roadway and the proposed roadway. By placing rock as indicated on the plans we will ensure that the proposed abutments are protected from erosion.

Initial Cost Savings: \$211,471

Recommendation C-1: Procure the project using a design build-contract in lieu of a design-bid build.

Response: Do not implement

This requires a complicated process of selecting appropriate candidates and requires a long lead time for advertising, forming teams, and short listing teams. This is a stimulus project and time is not available for this process.

Initial Cost Savings: DS

If any further assistance is needed, please contact Foster C. Grimes at (478) 552-4643.

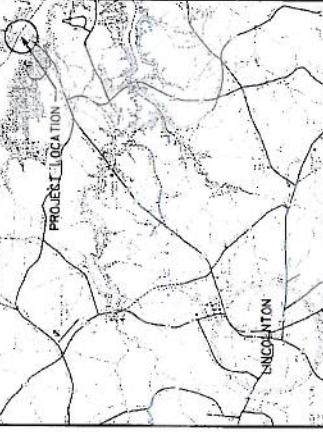
FCG

PRECONSTRUCTION STATUS REPORT FOR PI:0001370

PROJ ID:	0001370 Lincoln	SR 437US 378 @ SAVANNAH RIVER 6.8 MI E OF LINCOLNTON @ S.C.	MGMT LET DATE:	08/21/2009								
COUNTY:	0.60	MPO:	Not Urban	DOT DIST:	2							
LENGTH (MI):	BR000-0001-00(370)	TIP #:		CONG. DIST:	10							
PROJ NO.:	Grimes, Foster	MODEL YR :		BIKE:	N							
PROJ MGR:	District 2	TYPE WORK:	Bridges	MEASURE:	E							
OFFICE:	No Consultant, GDOT In-House Design	CONCEPT:	BRIDGE	NEEDS SCORE:	06							
CONSULTANT:	GDOT	PROG TYPE:	Replacement	BRIDGE SUFF:	48.07							
SPONSOR :		Prov. for ITS:	N									
DESIGN FIRM:		BOND PROJ :										
SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
5/11/2009		Concept Development	8/1/2001	1/30/2002	100	PE	2003	2003	1,031,000.00	Q10	AUTHORIZED	11/13/2002
		Concept Meeting	8/20/2001	8/20/2001	100	ROW	2007	2007	17,300.00	Q10	AUTHORIZED	3/28/2007
		PM Submit Concept Report	1/7/2002	1/7/2002	100	CST	LR	2010	15,751,417.50	1,1C0	PRECST	
		Receive Preconstruction Concept Approval	1/18/2002	1/30/2002	100							
		Management Concept Approval Complete	1/18/2002	1/30/2002	81							
		Value Engineering Study	12/8/2008	3/23/2006	100	PE Cost Est Amt:						
		Environmental Approval	8/25/2003	6/10/2002	100	ROW Cost Est Amt:						
		Field Survey's/SDE	1/22/2002	9/15/2006	100	CST Cost Est Amt:						
		Preliminary Plans	2/15/2001	10/7/2003	4/21/2006	4/27/2006	100	PE	8/24/2006	Q10	ROW	
		Preliminary Bridge Design	1/22/2002	8/7/2005	4/27/2006	4/27/2006	100	CST	4/16/2008	0.00	L1C0	
		Underground Storage Tanks	4/24/2006	6/26/2006	100							
		404 Permit Obtainment	10/4/2006	10/4/2006	100							
		PFPR Inspection	10/19/2006	11/9/2006	100							
		R/W Plans Preparation	11/17/2006	11/14/2006	100							
		R/W Plans Final Approval	2/7/2002	2/11/2002	100							
		L. & D Approval	3/26/2007		33							
		R/W Acquisition			0							
		Stake R/W			100							
		Soil Survey	10/17/2002	10/21/2002	100							
		Bridge Foundation Investigation	1/31/2006	8/27/2008	100							
		Final Design	9/29/2005	78	78							
		Final Bridge Plans Preparation	4/26/2006	1/30/2007	100							
		FFPR Inspection			0							
		Submit FFPR Responses (OES)			0							
			6/17/2009									
PDD:	OCT00 BD ADD: ASSIGNED DISTRICT 2											
Bridge:	PSR 03/03/09 (FINAL PLANS SENT 03/03/09)											
Design:	(LM)											
EIS:	CEAPd3-23-06/OnSched/Constl/Rev12-12-06/Need SC. mitig. and permit to certify 3-1-09(JK)											
LGPA:	LINCOLN SGN DO UTL 12-14-04 BL-STATE, S. CAROLINA SGN 8-1-02 RESCSSION LETTER SENT TO LINCOLN 6-3-05.											
Programming:	#1-4-07 CAHIBR REPLIS&M PLNS NRYU108001PfPR sent 9/13/06 w/r BRIDGE REPLACEMENT											
Traffic Op:	(JW) Dist Clear To -cl- Need Final Plans from PM 3/05/2009											
Utility:												
EMG:												
Prel. Parcel CT:	2	Total Parcel in ROW System:	2	Cond. Filed:	0	Acquired by:	DOT					
Under Review:	0	Options - Pending:	0	Relocations:	0	Acquisition MGR:	Whitecotton, Brad					
Released:	0	Condemnations Pend:	0	Acquired:	0	R/W Cert Date:						
						DEEDS CT:	0					

District Comments

12/20/01 Bi-State agmt sent to SC DOT-GDOT responsible for const 1/30/02 Conc apprvd, brdg on new loc, exist brdg as detr: RW-(C.O.E.) 2/13/03 Brdg dept advd that Co wants brdg raised (8') to handle boats that wil go under 4/18/03 COE concurs with higher brdg 5/7/03 Hlinnenkohl apprvs higher elev 8/5/2008 Waiting on Right of Entry from Army Corp March Mtg Notes: VE Study 3/3-3/5, Coordinating w/ COE and SC DOT District will make the let date of Aug 09 per BW, kta 3.10.09



LOCATION SKETCH

NOT TO SCALE

DESIGN DATA:
 TRAFFIC A.D.T. : 3000(2009)
 K = 8%
 DIRECtIONAL DIST. 60%
 224 H.R. TRUCKS 8.5%
 2TRUCKS 6%
 SPEED DESIGN 55 MPH
 SU 5%
 SU 5.3%
 COMB 3%

MID-POINT COORDINATE
 LAT 33° 54' 26.51622"
 LON 82° 23' 71.985"

BEGIN PROJECT
 STA. 413+00
 S. R. 437 U.S. 378
 M. P. 17.630 GEORGIA
 N 1401505.669871
 E 587258.096736

THE LOCATION AND DESIGN APPROVAL DATE
 FOR THIS PROJECT WAS JANUARY 26, 2002.

PROJECT CLASSIFICATION RURAL MINOR ARTERIAL
 PROJECT STATUS: EXCEPT
 HORIZONTAL DATUM: NAVD88
 VERTICAL DATUM: NAVD88
 THIS PROJECT HAS BEEN PREPARED USING IMPERIAL
 UNITS AND EAST ZONE COORDINATES.
 THIS PROJECT IS LOCATED SSW IN LINCOLN COUNTY, GEORGIA
 AND 4.82 IN MCMORICK COUNTY, SOUTH CAROLINA.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED BRIDGE REPLACEMENT

SAVANNAH RIVER FEDERAL AID PROJECT BRO00-0001-00(370) LINCOLN COUNTY

NOTE:
 ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS,
 DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO
 "STATE HIGHWAY DEPARTMENT" MEANS THE STATE HIGHWAY DEPARTMENT, GEORGIA STATE
 HIGHWAY DEPARTMENT, "HIGHWAY DEPARTMENT", OR "DEPARTMENT" WHEN THE CONTEXT
 THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA MEAN, AND SHALL BE DEEMED
 TO MEAN THE DEPARTMENT OF TRANSPORTATION.

FEDERAL ROUTE • 378
 STATE ROUTE • 43
 P. I. NO. 0001370
 STATE
 CLARKS HILL LAKE
 GOVERNMENT
 S.C.
 S. CAR.
 LINCOLN CO.
 GA.
 MCMORICK CO.
 U.S.
 GOVERNMENT
 CLARKS HILL LAKE
 GOVERNMENT

PREPARED BY: LARRY MORRIS CAD OPERATOR J
 RECOMMENDED FOR ALAN SMITH
 SUBMISSION BY: DISTRICT DESIGN ENGINEER
 SUBMITTED BY: GEORGE BREWER
 APPROVED BY: DISTRICT ENGINEER
 END PROJECT
 STA. 454 + 50 U.S. 378
 M.P. 0.347 SOUTH CAROLINA
 N 1404993.296645
 E 587258.096736
 U.S.
 GOVERNMENT

NOT TO SCALE
 DRAWING NO. 1-01
 DATE CHIEF ENGINEER
 PLANS COMPLETED -
 REVISIONS

U.S.
 GOVERNMENT
 U.S.
 GOVERNMENT

LENGTH OF PROJECT	GEORGIA MILES	SOUTH CAROLINA MILES	TOTAL MILES
NET LENGTH OF ROADWAY	0.212	0.199	0.411
NET LENGTH OF BRIDGES	0.165	0.149	0.314
NET LENGTH OF PROJECT	0.381	0.347	0.728
NET LENGTH OF EXCEPTIONS	0.00	0.00	0.00
GROSS LENGTH OF PROJECT	0.38	0.347	0.728